

Mineral Industry Surveys

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TIN IN JUNE 1999

Domestic consumption of primary tin in June was estimated by the U.S. Geological Survey to be 1% lower than that in May and 3% higher than that in June 1998.

The Platt's Metals Week average composite price for tin in June was \$3.51 per pound, down by 3% from that in May, and down 9% from that in June 1998.

British Steel Corp. (the United Kingdom) and Hoogovens (the Netherlands) jointly announced their intention to merge and thereby create the third largest steel producer in the world, second only to Posco (the Republic of Korea) and Nippon Steel Corp. (Japan). The decision is subject to a shareholders meeting in the fall. The new company would be known as BSKH plc. Both firms stressed that the move is a mutually agreed merger and in no sense a takeover, though, British Steel, being the larger, would constitute 60% of the new group. Both firms have a strong presence in tinplate. This is the third major merger within the European steel industry in the last 2 years, following the mergers of Thyssen and Krupp (both in Germany), and Usinor (France) and Cockerill-Sambre (Belgium), almost all of them tinplate producers, bringing the number of European Union tinplate manufacturers down to three. Hoogovens made about 800,000 tons of tinplate in 1998 at its five tinning lines, including the one in Norway. British Steel's tinplate production is of the same order. At a combined production of around 1.5 million t/yr, BSKH emerges as the largest tinplate producer in Europe; the next two in size each make just over 1 million t/yr. BSKH will hold an expected 35% of the European tinplate market (Tin International, 1999).

In Bolivia, further progress was reported on the planned privatization of the country's Government-owned tin smelters at Vinto. Negotiations have been taking place between the central government and the Oruro regional government over the expected monetary proceeds of the Vinto sale. The Oruro region, where the tin smelters are located, had been making demands that the proceeds of the sale go to the regional government. Recently, a deal was brokered whereby a percentage of the proceeds will go

to the region. The Government has not yet decided if the Vinto sale will include mines and smelters, or even if the chosen properties are to be sold or leased out. The Government hoped the terms would be set by the end of summer. Then a tender would be held. Vinto owns the Oruro tin smelter, which has the capacity to produce 20,000 t/yr of Grade A tin and 4,200 t/yr of antimony trioxide. The privatization process was initially scheduled to conclude in the third quarter of 1995. Vinto operates two tin smelters and one antimony smelter (Platt's Metals Week, 1999).

A recently published list of the world's largest packaging companies, who use materials ranging from tinplate to aluminum, glass, paper, cardboard, and polymers, shows ranking in 1998 and sales in millions of dollars:

1.	Crown Cork and Seal	8,325
2.	Tetra Laval	7,035
3.	Toyo Seikan	6,219
4.	Viag	4,961
5.	International Paper	4,950
6.	Owens-Illinois	4,657
7.	Pechiney	4,232
8.	Stone Container	4,136
9.	Tenneco	3,995
10.	Saint Gobain	3,665

The firms known for heavy use of tinplate include Crown Cork and Seal, Toyo Seikan, and Viag (The Canmaker, 1999b).

The aerosol can industry was born 70 years ago, when the first patent was filed for the technique of spraying a product under pressure. Erik Rotheim of Norway was the inventor in 1929. Since then, worldwide aerosol can demand has grown dramatically to an estimated 10 billion units a year. The first aerosol can patented by Rotheim was a fairly crude piece—an impacted/extruded aluminum can with a straight wall which left a ridge between the top of the can and the cap. But, that basic shape has remained largely unchanged to the present. The dispensing mechanism design is relatively simple. The contents of the can

are dissolved or suspended in a liquid solvent concentrate. A liquefied gas acts as the propellant some of the propellant exists as a gas under pressure above the liquid. When the aerosol is activated, a valve opens, the pressurized gas pushes down on the liquid and forces it up the dip tube and out. As the mixture is used up, the gas evaporates from the liquid inside the container to maintain a constant pressure. It was not until the 1940's that aerosols began to take off commercially. During World War II, more soldiers in the Pacific region were dying from insect-borne diseases than from bullets. Then the soldiers were equipped with huge, heavy-weight aerosols containing insect repellent. Known as "bug bombs," these were very successful in protecting the soldiers against insects and 50 million were produced in the 1941-45 era. After the war, the first consumer aerosol cans were also predominantly for insecticides. Then, by the early 1950's, producers extended the aerosol can to other products. One of the earliest and most successful of the immediate post-war developments was the invention of the aerosol can for dispensing whipped cream, by Aaron S. Lapin in 1946 (Wall Street Journal, 1999). The basic design has changed little over the years. Three-piece welded tinplate containers dominate the largest markets in Europe and the United States with 61 and 75% of the market respectively, the remainder using impact-extruded aluminum

construction. Each type has its own design strengths. Cosmetics and personal care companies like the streamlined look of the aluminum container with its rounded neck that enables the valve to be applied directly. Aluminum offers a range of decorative finishes impossible with tinplate. Tinplate, despite the welded side seam, has its own striking reflective finish. Today, there are more than 200 different uses for the aerosol can, carrying over 2,000 brand names, on the market globally (The Canmaker, 1999a).

Update

On July 30, 1999, the *Platt's Metals Week* composite price for tin was \$3.56 per pound.

References Cited

- Platt's Metals Week, 1999, Sale plans for Bolivia's Vinto clear regional hurdle: Platt's Metals Week, v. 70, no. 24, June 14, p. 9.
- The Canmaker, 1999a, Let us spray: The Canmaker, v. 12, July, p. 34-37.
- 1999b, Picking the winners: The Canmaker, v. 12, July, p. 54.
- Tin International, 1999, British Steel and Hoogovens join forces: Tin International, v. 72, no. 6, p. 1.
- Wall Street Journal, 1999, Invention is the adopted child of necessity: Wall Street Journal, v. 234, no. 17, July 26, p. A22.

TABLE 1
SALIENT TIN STATISTICS 1/

(Metric tons, unless otherwise noted)

	1998 p/	1999		
		May	June	January-June
Production, secondary e/ 2/	10,800	900	900	5,400
Consumption:				
Primary	41,400	3,680 t/	3,640	22,100
Secondary	11,400	1,080	1,060	6,250
Imports for consumption, metal	44,000	2,990	NA	NA
Exports, metal	5,020	506	NA	NA
Stocks at end of period	XX	7,510	7,490	XX
Prices (average cents per pound): 3/				
Metals Week composite 4/	373.26	371.94	360.91	XX
Metals Week New York dealer	261.38	264.81	248.16	XX
London, standard grade, cash	251.00	256.00	239.00	XX
Kuala Lumpur	246.06	251.52	237.12	XX

e/ Estimated. p/Preliminary. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices.

2/ Includes tin recovered from alloys and tinplate. The detinning of tinplate (coated steel) yields only a small part of the total.

3/ From Platt's Metals Week.

4/ The Metals Week composite price is a calculated formula, not a market price, that includes fixed and finance charges, and a risk factor. It normally is substantially higher than other tin prices.

TABLE 2
METALS WEEK COMPOSITE PRICE 1/

(Cents per pound)

Period	High	Low	Average
1998:			
June	413.70	382.49	397.36
July	381.20	374.98	377.55
August	386.88	374.45	380.30
September	373.12	364.56	368.24
October	374.40	356.46	366.88
November	380.73	361.99	370.09
December	363.97	350.47	357.58
January-December	413.70	350.47	373.26
1999:			
January	353.37	343.72	348.59
February	364.44	351.24	356.56
March	363.63	356.99	361.19
April	377.31	357.08	365.05
May	384.76	373.61 2/	371.94
June	368.44	354.81	360.91

1/ The Metals Week composite price is a calculated formula, not a market price, that includes fixed and finance charges, and a risk factor. It normally is substantially higher than other tin prices.

2/ Adjusted by the U.S. Geological Survey.

Source: Platt's Metals Week.

TABLE 3
TINPLATE PRODUCTION AND SHIPMENTS IN THE UNITED STATES 1/

(Metric tons, unless otherwise noted)

Period	Tinplate waste (waste, strips, cobble, etc.) (gross weight)	Tinplate (all forms)		Tin per metric ton of plate (kilograms)	Shipments 2/
		Gross weight	Tin content		
1998 p/	W	1,700,000	8,760	5.2	2,320,000
1999:					
January	W	127,000	723	5.7	185,000
February	W	135,000	713	5.3	177,000
March	W	143,000	768	5.4	218,000
April	W	144,000	781	5.4	195,000
May	W	148,000	807	5.5	196,000
June	W	148,000	966	6.5	NA

p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to three significant digits.

2/ Shipments data from American Iron and Steel Institute monthly publication.

TABLE 4
U.S. TIN IMPORTS FOR CONSUMPTION AND EXPORTS 1/

(Metric tons)

Country or product	1999			
	1998	April	May	January- May
Imports:				
Metal (unwrought tin):				
Belgium	324	6	6	24
Bolivia	5,160	502	303	1,370
Brazil	4,710	100	461	1,480
Chile	894	--	496	1,780
China	9,870	1,600	539	4,610
Hong Kong	840	54	--	95
India	359	--	--	--
Indonesia	7,880	660	660	3,340
Japan	222	43	--	123
Malaysia	1,870	59	81	704
Peru	8,650	620	400	3,440
Singapore	822	--	--	60
Thailand	540	20	--	20
United Arab Emirates	100	--	--	--
United Kingdom	790	--	--	2
Vietnam	212	--	--	--
Other	220	20	44	171
Total	44,000	3,690	2,990	17,200
Other (gross weight):				
Alloys	1,320	206	285	1,080
Bars and rods	1,160	83	77	409
Foil, tubes, and pipes	3	(2/)	1	1
Plates, sheets, and strip	93	15	3	21
Waste and scrap	4,190	230	166	1,410
Miscellaneous	1,800	113	272	741
Total	8,560	648	804	3,660
Exports (metal)	5,020	507	506	2,570

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 5
CONSUMPTION OF TIN IN THE UNITED STATES, BY FINISHED PRODUCT 1/

(Metric tons of contained tin)

Product	1998 p/	1999						January- June total
		May			June			
		Primary	Secondary	Total	Primary	Secondary	Total	
Alloys (miscellaneous) 2/	368	W	W	W	W	W	W	W
Babbitt	35	W	W	W	W	W	W	22
Bar tin and anodes	20	21	--	21	20	--	20	118
Bronze and brass	1,010	103 r/	149	252 r/	106	136	242	1,570
Chemicals	8,020	662 r/	W	662 r/	684	W	684	4,000
Collapsible tubes and foil	177	W	W	W	W	W	W	W
Solder	12,500	779	337	1,120	583	166	749	5,850
Tinning	764	20	--	20	24	--	24	242
Tinplate 3/	8,800	807	--	807	966	--	966	4,760
Tin powder	W	W	--	W	W	--	W	W
White metal 4/	W	W	--	W	W	--	W	W
Other	4,310	390 r/	95 r/	485	356	259	615	3,420
Total reported	36,000	2,780	581 r/	3,360	2,740	561	3,300	20,000
Estimated undistributed consumption 5/	16,800	900	500	1,400	900	500	1,400	8,400
Grand total	52,800	3,680	1,080	4,760	3,640	1,060	4,700	28,400

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includesterne metal.

3/ Includes secondary pig tin and tin acquired in chemicals.

4/ Includes pewter, britannia metal, and jewelers' metal.

5/ Estimated consumption of plants reporting on an annual basis.

TABLE 6
DEFENSE LOGISTICS AGENCY
TIN STOCKPILE DISPOSALS 1/

(Metric tons)

Period	Monthly disposals 2/
1998:	
June	220
July	250
August	250
September	220
October	190
November	--
December	20
January-December	<u>1,900</u>
1999:	
January	20
February	--
March	5
April	30
May	--
June	20
Total	<u>75</u>

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ These disposals represent only the daily spot sales program, not the long-term dealer contract sales program.

Source: Defense Logistics Agency.